DECISION RECORD

Environmental Assessment No. NM-060-00-068
Section 15 Grazing Authorization
Allotment 62067

It is my decision to issue a ten-year lease to Ms. Louise Van Eaton to graze cattle on Allotment 62067 based on the Proposed Action in Environmental Assessment NM-060-00-068. Permitted use will be for 52 animal units yearlong at 100 percent federal range, which corresponds to 624 animal unit months (AUMs).

In accordance with 43 CFR §4160, a period of 15 days is allowed after the receipt of this proposed decision to protest it to the Authorized Officer in person or in writing. Points of protest should be specific. In the absence of a protest, this proposed decision will become the final decision of the Authorized Officer without further notice.

In accordance with 43 CFR §4.470, a period of 30 days is allowed following the date of the final decision to file an appeal and petition for a stay of the decision for the purpose of a hearing before an Administrative Law Judge. The specific points being appealed should be clearly and concisely stated. Appeals can be filed at the following address:

Field Office Manager
Bureau of Land Management
Roswell Field Office
2909 West Second Street
Roswell, New Mexico 88201

signed by T. R. Kreager — 10/26/01
Assistant Field Office Manager - Resources — Date

ENVIRONMENTAL ASSESSMENT
for
Section 15

GRAZING AUTHORIZATION
on
ALLOTMENT 62067

Township 2 South, Range 25 East
Section 34

Township 3 South, Range 25 East
Sections 3, 10, 11, 14, 15

EA-NM-060-00-068

March 2000

U.S. Department of the Interior
Bureau of Land Management
Roswell Field Office
Roswell, New Mexico

I. BACKGROUND

A. Introduction

When authorizing livestock grazing on public range, the Bureau of Land Management (BLM) has historically relied on a land use plan and environmental impact statement to comply with the National Environmental Policy Act (NEPA). A recent decision by the Interior Board of Land Appeals, however, affirmed that the BLM must conduct a site-specific NEPA analysis before issuing a permit or lease to authorize livestock grazing. This environmental assessment fulfills the NEPA requirement by providing the necessary site-specific analysis of the effects of issuing a new grazing lease on Allotment 62067.

B. Purpose And Need For The Proposed Action

The purpose of issuing a new grazing lease would be to authorize livestock grazing on public range on Allotment 62067. The lease would be needed to specify the types and levels of use authorized, and the terms and conditions of the authorization pursuant to 43 CFR §§4130.3, 4130.3-1, and 4130.3-2.

C. Conformance With Land Use Planning

The proposed action conforms with the Roswell Approved Resource Management Plan (RMP) and Record of Decision (BLM 1997) as required by 43 CFR 1610.5-3.

D. Relationships to Statutes, Regulations, or Other Plans

The proposed action and alternatives are consistent with the Federal Land Policy and Management Act of 1976 (43 U.S.C. 1700 et seq.); the Taylor Grazing Act of 1934 (43 U.S.C. 315 et seq.), as amended; the Clean Water Act (33 U.S.C. 1251 et seq.), as amended; the Endangered Species Act (16 U.S.C. 1535 et seq.), as amended; the Public Rangelands Improvement Act of 1978 (43 U.S.C. 1901 et seq.); Executive Order 13112, Invasive Weeds; Executive Order 11988, Floodplain Management; and Executive Order 11990, Protection of Wetlands.

II. PROPOSED ACTION AND ALTERNATIVES

A. Proposed Action - Current Livestock Management

The proposed action is to issue Ms. Louise Van Eaton a ten-year lease to graze cattle on Allotment 62067. Permitted use would be for 52 animal units (AUs), year-long at 100 percent federal range, which corresponds to 624 animal unit months (AUMs).' This Section 15 allotment is outside the Grazing District boundary and the BLM does not control overall livestock numbers on the allotment.

Underthe Proposed Action, management of the allotment would continue under the terms and conditions of the current lease. No changes to livestock management or to existing range

improvements would be required.

B. No Grazing Lease Alternative

Under this alternative a new grazing lease would not be issued for Allotment 62067. No grazing would be authorized on federal land on this allotment.

III. AFFECTED ENVIRONMENT AND ENVIRONMENTAL IMPACTS

A. General Setting

Allotment 62067 is in DeBaca County, 26 miles south of Fort Sumner. The Pecos River flows north-to-south through a broad alluvial valley, meandering along the west boundary of the allotment. Steep, rough breaks rise above the river floodplain to uplands on the east. Elevations range from 3741 feet at the downstream end of the river, to 3970 feet on the uplands in the northern part of the allotment.

The climate is semi-arid with normal monthly temperatures ranging from 20*F in January to 920F in July at Fort Sumner (Owenby and Ezell 1992). Observed minimum and maximum temperatures were -270F and 1090F, respectively. Average annual precipitation is 13.9 inches, primarily as rainfall. Average annual snowfall is 20 inches. Annual precipitation has ranged from 6.06 inches to 25.63 inches (Kunkel 1984).

Allotment 62067 is considered a riparian allotment because of its 2.5 miles of riparian habitat along the Pecos River. Riparian (and wetland) areas are directly influenced by permanent free water, whether at the surface or in the subsurface. Compared to adjacent upland sites, the riparian area has a greater amount and diversity of vegetation. The diversity of plant species and availability of water makes riparian areas prime wildlife habitat.

Though the riparian areas along the river have tremendous resource values, they have been altered by the regulation of river flows by upstream reservoirs, especially Sumner Lake. Reservoir releases are controlled by the Bureau of Reclamation, and are largely driven by irrigation demands. Management of allotment riparian areas is within the constraints imposed by the regulation of river flows.

B. Affected Resources

The following resources or values are not present or would not be affected by the authorization of livestock grazing on Allotment 62067: Areas of Critical Environmental Concern, Cultural Resources, Native American Religious Concerns, Prime or Unique Farmland, I nvasive/Non native species, Minority/Low Income Populations, Hazardous or Solid Wastes, Wild and Scenic Rivers, and Wilderness. Affected resources and the impacts resulting from livestock grazing are described below.

1 For a cattle operation, an animal unit (AU) is defined as one cow with a nursing calf or its equivalent. An animal unit month (AUM) is the amount of forage needed to sustain that cow and calf for one month.

1. Livestock Management

Affected Environment

Ms. Van Eaton currently runs a cattle on Allotment 62067 with a permitted use of 52 AUs year-long at 100 percent federal range, corresponding to 624 AUMs. Permitted use was kept at the same level following reviews in 1988 and in 1993 after vegetation monitoring. The BLM does not control livestock numbers on Allotment 62067. Instead, the BLM bills Ms. Van Eaton for the amount of forage available on the public rangeland within the allotment. She runs approximately 110 head of livestock, though numbers are adjusted routinely.

The allotment covers approximately 3840 acres, including 1960 acres of BLM land and 1880 acres of private land. The private land includes 120 acres of uncontrolled land, which is not owned by the lessee, but is not fenced apart from the allotment.

Allotment 62067 is divided into three pastures, the Upper River, Lower River, and Homestead pastures. Livestock water at the river in the Lower River Pasture, and water is provided in the other pastures from windmills. Fencing is in good repair, but maintenance is difficult on the steep breaks east of the river.

The allotment was placed in the "I" category (i.e., a "custodial" allotment) upon completion of the Roswell Resource Area Management Framework Plan Amend ment/Environmental Impact Statement (BLM 1984). The BLM proposed no changes in management or authorized use.

Environmental Impacts

Under the Proposed Action, current livestock grazing management would continue on the allotment. Because grazing would be sustainable under current management, no impacts to the livestock operation would occur.

Under the No-Grazing Alternative, no livestock grazing would be authorized on BLM lands. If livestock grazing were to continue on adjacent privately owned lands, the BLM land would have to be fenced apart to prevent trespass on public lands (43 CFR 4140.1 (b)(1)). The expense of fencing would be borne by the private landowner.

Cumulative impacts of the grazing and no grazing alternatives were analyzed in *Rangeland Reform '94 Draft Environmental Impact Statement (BLM and USDA Forest Service 1994)* and in the Roswell *Resource Area Draft RMPIEIS (BLM 1994).* The no livestock grazing alternative was not selected in either document.

2. Vegetation

Affected Environment

Allotment 62067 is in the Grassland community type. It is described as a riparian allotment because of its proximity to the Pecos River. Riparian vegetation, found primarily within a narrow band along the river, is discussed in the RiparianMetland section of this environmental

assessment.

The upland and bottomland vegetative communities consist of blue, sideciats, and black grama, burrow grass, bush and sand muhly, threeawn, and tobosa. Hall's panicum, galleta, sand dropseed, and hairy grama are additional herbaceous species found on the bottomland. Shrub species found in the river pastures include honey mesquite, four-wing saltbush, and javelinabush.

General objectives for each vegetation community are described in the Roswell Approved RMP and Record of Decision (BLM 1997), and the Roswell Draft RMP/ElS (BLM 1994). Vegetation monitoring data have been collected periodically from 1983 to the present at permanent monitoring sites in each of the three pastures. Table 1 presents monitoring data in terms of percent ground cover and percent composition of vegetative cover. Table 2 summarizes the ecological site condition for the three pastures for each year that monitoring data were collected.

Monitoring data are within acceptable ranges for the vegetation objectives described in the RMP (BLM 1997). The monitoring data also fit the range of potential ground cover figures listed in the Soil Conservation Service Technical Guides for the ecological sites on the allotment, which are Sandy Loam CP-2 and Shallow Sandstone CP-2.

Environmental Impacts

Under the Proposed Action, vegetation would continue to be grazed and trampled by livestock, primarily those species preferred as forage. Growing season impacts to bottomland plant species would continue when livestock are moved into the riparian area. Some overutilization of the bottomlands could occur if livestock were grazed there during each growing season. Generally, the uplands would be lightly grazed because livestock would be present mainly during the dormant season.

Past monitoring data suggest that continuing current management practices would maintain the ecological condition at a sustainable level. The 1999 monitoring data and ecological condition rating suggest a dramatic improvement from 1992. These figures are probably due partly to precipitation that was higher than normal in early 1999.

Under the No-Grazing Alternative, no impacts to vegetation resources would occur on public lands from authorized livestock grazing. Vegetation cover would increase over the long term in some areas. Ground cover species in the bottornlands would increase in cover and composition over the short term, but could become decadent over time without livestock removing standing vegetation.

3. Soils

Affected Environment

The Soi/ *Survey of De Baca County, New Mexico (USDA Soil Conservation Service 1986)* was used to describe and analyze the impacts to soils. The most extensive soils on the allotment are Ustifluvents on the river floodplain and low terraces; Holloman-Rock outcrop complex on hillslopes and escarpments above the floodplain; Latom-Rock outcrop complex in the draws east the river; Reg n ier-Lato m- Rock outcrop on ridges and slopes east of the river; and Chispa-Los Tanos fine sandy loam on the uplands to the east.

The soils formed in residuum from sandstone, shale, and gypsiferous material, or in alluvium from mixed sources. They are generally shallow and well-drained, except on the uplands and floodplain where they are deep. The Ustifluvents are somewhat poorly drained. The surface textures are commonly a fine sandy loam. Runoff is rapid except on the alluvial soils of the floodplain and the uplands where it is slow. The water erosion hazard is slight on the uplands, but high everywhere else. The entire allotment is highly susceptible to wind erosion.

Environmental Impacts

Under the Proposed Action, livestock would remove some of the cover of standing vegetation and litter, and compact the soil by trampling. If livestock management were inadequate, these effects could be severe enough to reduce infiltration rates and increase runoff, leading to greater water erosion and soil losses (Moore et al. 1979, Stoddart et al. 1975). Producing forage and protecting the soil from further erosion would then be more difficult. The impacts of removing vegetation and trampling would be greatest in areas of concentrated livestock use, such as trails, waters, feeders, and shade. Some sandy soils on the allotment are highly vulnerable to wind erosion. Removal of the vegetative cover also increases the exposure of soils to the erosive force of wind.

Though livestock impacts are possible, monitoring data from 1999 indicate that the current level of grazing is sustainable and should maintain an adequate vegetative cover to protect soils from erosion. Periodic rangeland monitoring would help ensure an adequate vegetative cover to protect soils from wind or water erosion by indicating when and where changes to livestock management are needed in the future.

Under the No-Grazing Alternative, any risk of overgrazing would be eliminated. However, removing grazing animals from an area where they were a natural part of the landscape could result in poor use of precipitation and inefficient mineral cycling (Savory 1988). Bare soil could be sealed by raindrop impact, and vegetation could become decadent, inhibiting new growth. Therefore, the results of no grazing could be similar to those of overgrazing in some respects.

4. Water Quality

Affected Environment - Surface Water

The Pecos River meanders on and off Allotment 62067 along its west boundary. Numerous

ephemeral draws drain the uplands from the east including Pump, Ward, and Rock canyons.

Allotment 62067 is on the river reach between Salt Creek and Sumner Dam, which is identified as Segment 2207 by the New Mexico Water Quality Control Commission (WQCC). Under the authority of the federal Clean Water Act, the WQCC (1995) designated uses for streams in New Mexico. Designated uses for Segment 2207 include fish culture, irrigation, a limited warmwater fishery, livestock watering, wildlife habitat, and secondary contact (e.g., wading).

The WQCC (1995) also established waterquality standards to protectthe designated uses, and directs periodic water quality assessments to ensure that standards are met. According to the New Mexico Environment Department (NMED), Segment2207 is currently meeting the standards for all its designated uses (Hogge 1998, NMED 1998a, WQCC 1998).

Environmental Impacts - Surface Water

In general, livestock grazing is considered a potential cause of nonpoint source pollution, with sediment as the primary contaminant. Livestock grazing on the allotment, however, is not expected to be a significant cause of sediment loading to the Pecos River under either management alternative. The NMED conducted an intensive assessment of Pecos River water quality in 1997. They concluded that no water quality standards have been exceeded in the past ten years on Segment 2207 (NMED 1998a).

The NMED also considered siltation and stream bottom deposits in evaluating impacts to the threatened Pecos bluntnose shiner and its habitat. The NMED cites a letter from the U.S. Fish and Wildlife Service (USFWS) that sediment conditions alone are not significant contributing factors in the ability of the bluntnose shiner to survive and reproduce. Instead, upriver reservoirs have trapped sediment and resulted in water exiting the reservoirs that is "starved of sediment." Therefore, sediment loading due to livestock grazing on the allotment would not be expected to significantly affect Pecos River water quality under either alternative.

Bacteria and nutrients are other potential contaminants that can be related to livestock grazing. A review of historic water-quality data did not show any evidence of bacteria contamination of the river, but elevated levels of ammonia were noted during sampling in 1986 (NMED 1998a). The level was still below the chronic standard for ammonia established by the state. The Roswell wastewater treatment plant was discharging during sampling, and is believed to have been the principal contributor to the elevated levels of ammonia. BLNWR was also mentioned by the NMED as a possible contributor. Because no water quality standards have been exceeded in more than ten years, livestock grazing on the allotment does not appearto have a significant impact on Pecos Riverwater quality.

Cumulative impacts to Pecos River water quality from grazing on Allotment 62067 would not be expected to be significant. The intensive assessment of the Pecos River by the NMED also included Segment 2206 (Salt Creek to the Rio Pehasco) immediately downstream of Segment 2207. Besides rangelands, potential sources of pollutants in Segments 2206 and 2207 include irrigation return flows, dairies, municipal and industrial sources, mineral development, and road construction and maintenance. Even considering all these potential pollution sources, neither segment had a

documented exceedance of any water quality standard.

Affected Environment - Ground Water

Allotment 62067 lies in the southern part of the Fort Sumner Underground Water Basin (New Mexico State Engineer 1995). Ground water is found in the Artesia Group at depths greater than 70 feet in the eastern uplands of the allotment, but less than 10 feet in the alluvium near the Pecos River. (Mourant and Shomaker 1970). Yields of 100 gallons per minute or more from the alluvium are common (Geohydrology Associates, Inc. 1978).

Uses of ground water can be limited by quality in the area. Specific conductance (a surrogate measure of total dissolved solids) is typically more than 3000 micromhos per centimeter in ground water drawn from the alluvium, and more than 13,000 micromhos per centimeter from the Artesia Group.

Environmental Impacts - Ground Water

Livestock grazing would not be expected to have a significant impact on ground-water quality under either management alternative. Livestock would be dispersed over the allotment, and the soil would filter potential contaminants.

The WQCC has the primary responsibility for ground-water quality management in New Mexico. In their most recent report on water quality in New Mexico, the WQCC (1998) did not find livestock grazing on rangelands to be an important potential source of contamination to ground water.

Wilson (1981) also discussed potential sources of ground-water contamination and the relative vulnerability of aquifers in New Mexico. He identified animal confinement facilities (e.g., dairies, feedlots) as potential sources of contamination elsewhere in New Mexico, including areas in the Pecos valley downstream from the allotment. Wilson did not, however, identify livestock grazing on rangelands as an important potential source of ground-water contamination.

Cumulative impacts to ground-water quality from grazing on Allotment 62067 would be negligible. Grazing impacts would be insignificant when compared to other potential sources of contamination, such as saline intrusion and agriculture.

5. Floodplains

Affected Environment

The properties of any stream or river are the result of the interaction of its channel geometry, streamflows, sediment load, channel materials, and valley characteristics (Rosgen 1996). The form and fluvial processes of the Pecos River have been modified by the construction of dams, which have drastically altered the streamflow and sediment regimes of the river. Flooding is less frequent and less severe than prior to dam construction, and sediment loads have been greatly reduced (see Figure 1). As a result, the channel has become moderately entrenched, and exhibits

much less lateral migration.

Flow regulation with the dams has also changed the extent, character, and condition of the SWDO riparian area on the river (Durkin et al. 1994). Seasonal flooding is required for obligate riparian vegetation, and sediment deposition on floodplains is :important for riparian succession.

For administrative purposes, the 100-year floodplain provides the basis for floodplain management on public lands. Of 3840 total acres on the allotment,1,020 acres are in the 100-year floodplain. This includes 770 acres of private land, 175 acres of BLM land, and 75 acres state land. Floodplain development on the allotment is limited to about two miles of roads and four miles of fence. 1964-1998, 8000 cfs was exceeded only once (1991).

Environmental Impacts

The reduction in the frequency and magnitude of peak flows on the river would continue to be the primary influence on floodplain function. Whether or not grazing is authorized would have little additional influence.

There would be little change to the level of development on the Pecos floodplain under the Proposed Action. Roads and fences would continue to be used and maintained. Development unrelated to livestock grazing would be unaffected.

Under the No-Grazing Alternative, some roads could be abandoned and fences removed, but new fences might be constructed to prevent livestock from moving onto public rangeland. Vegetation cover and diversity would probably increase somewhat on the rangelands, and localized impacts, such as cow trails, would revegetate over time.

Livestock grazing under either Alternative would not add to cumulative effects to the floodplain beyond the current level of development. The No-Grazing Alternative might improve floodplain function slightly because vegetation cover would increase, and some roads and fences might be removed or abandoned. The improvement expected under the No-Grazing Alternative would be insignificant, however, because current livestock impacts are negligible compared to all other impacts to the floodplain, and because additional fences might be constructed.

6. Riparian/Wetland Areas

Affected Environment

Riparian areas are found along 2.5 miles of the Pecos River on the allotment, with 0.5 mile administered by the BLM. The riparian vegetation community is tied to land form within the floodplain and is influenced by flooding intervals, which have been greatly affected by Santa Rosa and Sumner dams.

The land form is comprised of exposed and stabilized river bars, the floodplain, and terraces. The river channel is moderately entrenched and slightly confined by the valley (Durkin et a]. 1994). The channel material is primarily a sandy/clay bed with fine gravels with a relatively flat gradient (0.25

percent). Channel banks are fairly stable, but are sloughing or actively being cut in some locations. Bank erosion is most likely due to entrenchment of the channel rather than disturbance associated with livestock grazing or other land use activities.

The riparian vegetation community is characterized by stands of seepwillow and ground cover dominated by alkali sacaton. Saltcedar is common on bars and terraces that are not frequently flooded. Also present are willow species, inland saltgrass, ragweed, and other grasses and forbs.

Environmental Impacts

Under the Proposed Action, livestock would continue to graze the riparian area along the Pecos River. The greatest vegetation impacts would occur at livestock concentration areas, such as crossings, shaded areas, and accessible points along the river. Some bank sloughing might occur from trampling in some locations. Utilization of grass species, such as alkali sacaton, would be heavy within the floodplain and along the river due to annual use of the area.

Under the No-Grazing Alternative, the condition of vegetation in the floodplain and riparian areas would improve. Enhancements in vegetative cover and diversity would continue to be limited by the regulation of river flows and channel entrenchment, which promote the growth of saitcedar and other exotic species. Grasses would initially increase following the exclusion of livestock, but plant vigorcould decline from lack of vegetation removal, making ground cover species rank.

7. Wildlife

Affected Environment

The allotment provides a varietyof habitat types for terrestrial and aquaticwildlife species. The diversity and abundance of wildlife species in the area is due to the presence of open water, the numerous drainages interconnecting upland habitats to the Pecos floodplain, a mixture of grassland and riparian vegetation found within the floodplain of the river.

Numerous avian species use the Pecos River during spring and fall migration, including nongame migratory birds. The Bitter Lake National Wildlife Refuge (BLNWR) is several miles south of the allotment, and serves as a major focal point for migratory birds (e.g., ducks, geese, cranes, and other waterbirds). Common bird species are mourning dove, mockingbird, white-crowned sparrow, black-throated sparrow, blue grosbeak, northern oriole, western meadowlark, Crissal thrasher, western kingbird, northern flicker, common nighthawk, loggerhead shrike, and roadrunner. Raptors include northern harrier, Swainson's hawk, American kestrel, and occasionally golden eagle and ferruginous hawk.

The Pecos River once supported a wide variety of native fish species adapted to the flow regime that existed prior to dam construction, agriculture development, and the introduction of non-native fish species. The greatest impact to fish habitat is the manipulation of water supply to meet irrigation needs. Representative fish species include the red shiner, sand shiner, Arkansas Rivershiner, Pecos bluntnose shiner, plains minnow, silvery minnow, plains killifish,

mosquitofish, speckled chub, river carpsucker and channel catfish.

Common mammal species using the area include mule deer, pronghom antelope, coyote, gray fox, bobcat, striped skunk, porcupine, racoon, badger, jackrabbit, cottontail, whitefooted mouse, deer mouse, grasshopper mouse, kangaroo rat, spotted ground squirrel, and woodrat.

A variety of herptiles also occur in the area such as yellow mud turtle, box turtle, eastern fence lizard, side-blotched lizard, horned lizard, whiptail, hognose snake, coachwhip, gopher snake, rattlesnake, and spadefoot toad.

Environmental Impacts

Under the Proposed Action, livestock grazing would not significantly affect wildlife habitat. Vegetation monitoring indicates current grazing practices are sustainable. Under the No-Grazing Alternative, wildlife habitat would improve somewhat. Livestock would no longer compete directly with wildlife for forage, browse, and cover. Improvement would continue to be limited by invasive species (e.g., saltcedar), which affect plant composition. New range improvement projects that could benefit wildlife habitat, such as saltcedar or mesquite control, might not be implemented because these projects are primarily driven and funded through the range program.

8. Threatened and Endangered Species

The Pecos bluntnose shiner, Pecos gambusia, interior least tern, and Pecos sunflower are federally listed species that occur or have the potential to occur on the allotment. Federally proposed species include the Pecos pupfish. The status and presence of these species in the RFO area are discussed in the following section.

Pecos Bluntnose Shiner (Notropis simus pecosensis) - Federal Threatened

Affected Environment

Historically, the Pecos bluntnose shiner inhabited the Pecos Riverfrom Santa Rosa to near Carlsbad, New Mexico. Currently, the subspecies is restricted to the river from the Fort Sumner area southward locally to the vicinity of Artesia, and seasonally in Brantley Reservoir (NMDGF 1988; USFWS 1992). Routine fish community monitoring conducted by the USFWS in the Pecos River between Sumner Dam and Brantley Reservoir show the fish remains generally abundant, especially in light of cooperative efforts between the Bureau of Reclamation and the USFWS to more closely mimic natural flows in the Pecos River.
There are two designated critical habitat areas on the Pecos River within the RFO area. The first is a 64-mile reach beginning about ten miles south of Fort Sumner, downstream to a point about twelve miles south of the DeBaca/Chaves county line. The second reach is from Highway 31 east of Hagerman, south to Highway 82 east of Artesia.

The primary threat to the Pecos bluntnose shiner appears to be the manipulation of flows in the Pecos River to meet irrigation needs, and the subsequent drying of the river channel (Hatch et al. 1985). High flows in late winter-early spring before natural spring runoff appear to displace fish

into marginal downstream habitats, including Brantley Reservoir. Cessation of reservoir releases after spring runoff and before the advent of summer rains desiccates long stretches of the Pecos River. Maintenance of water levels within the Pecos River and its tributaries is beyond the management authority of the BLM. In addition to the manipulation of flows is the threat posed by non-native fish. The introduction and establishment of species such as the Arkansas River shiner offers direct competition with the Pecos bluntnose shiner.

Livestock grazing does not appear to be a threat to the bluntnose shiner based on a review of the literature. Norwas grazing identified in the Pecos Bluntnose Shiner Recovery Plan as having the potential to adversely affect water quality, and thus the bluntnose shiner (USFWS 1992).

Environmental lmgacts

Under the Proposed Action, livestock grazing impacts to the Pecos bluntnose shiner would benegligible. Under the No-Grazing Alternative, no impacts from livestock grazing would occur. Based on the assessment of Pecos River water quality conducted by the NMED in 1997, it appears that the shiner would not be affected by poor water quality if a grazing lease were issued.

Section 303(d) of the federal Clean Water Act requires that the State identify those waters for which existing required pollution controls are not stringent enough to meet State water quality control standards. The State must then establish total maximum daily loads

(TMDLs) for pollutants of these water-quality-limited stream segments. The presence of critical habitat for the threatened Pecos bluntnose shiner raised the Pecos River to a priority one on the New Mexico 303(d) ranking system.

Segment 2207 (Pecos River from Salt Creek to Sumner Dam) had been listed for TMDL development because of stream bottom deposits. Based on a review of historical data and their survey, however, the NMED (1998a) concluded there was no basis for developing TMDLs on Segment 2207. The NMED (1998b) removed the segment of the Pecos River from the 1998-2000 303(d) list.

NMED's decision to remove Segment 2207 from the 303(d) list bears directly on the Biological Opinion rendered by the USFWS on the Roswell Resource Management Plan. The USFWS cited the New Mexico Water Quality Control Commision's 305(b) report in their opinion. The report identified siltation, reduction of riparian vegetation, and streambank destabilization as among the probable causes for the Pecos River in the RFO area not supporting its designated use as a warm water fishery, and identified rangeland agriculture as a probable source of the nonsupport. Just as Segment 2207 was removed from the 303(d), the next 305(b) report will no longer list the segment as water qualitylimited (Hogge 1998).

Pecos Garribusla (Gambusia nobilis) - Federal Endangered

Affected Environment

The Pecos gambusia is endemic to the Pecos River Basin in southeastern New Mexico and western Texas. Historically, the species occurred as far north as the Pecos River near Fort Sumner, and south to Fort Stockton, Texas.

Recent records indicate, however, that its native range is restricted to sinkholes and springs and their outflows on the west side of the Pecos River in Chaves County. In spite of population declines, the species remains locally common in a few areas of suitable habitat. The BLNWR and the Salt Creek Wilderness Area contain the key habitat of the species in the RFO area. On the refuge, the gambusia is primarily restricted to springs and sinkholes in the Lake St. Francis Research Natural Area.

Endangerment factors include the loss or alteration of habitat (e.g., periodic dewatering) and introduction of exotic fish species (e.g., mosquitofish). Potential impacts to habitat may also occur from surface disturbing activities at sinkholes or springs and their outflows.

Environmental Impacts

No impacts to the Pecos gambusia would result from livestock grazing. No springs or seeps exist on BLM land within the allotment that would provide year-long habitat for the gambusia.

Interior Least Tern (Stema antillarum athalassos) - Federal Endangered

Affected Environment

The interior least tern nests on shorelines and sandbars of streams, rivers, lakes, and manmade water impoundments. Records of breeding terns in New Mexico are centered around BLNWR where the species has bred regularly since it was first recorded in 1949. BLNWR is considered "essential" tern breeding habitat in the state. Besides BLNWR, the only known nesting habitat in the RFO area is an alkali flat due north of the refuge on public lands. These are small populations with only a few nesting terns.

' The TIVIDL is defined as “the greatest loading or amount of the pollutant that may be introduced into a watercourse or stream reach from all sources without resulting in a violation of water quality standards."”
Sporadic observations of least terns have been recorded elsewhere in the Pecos River valley. The tern may occur on public lands in Chaves County along the river because suitable nesting habitat is found on sites that are sandy and relatively free of vegetation (i.e., alkali flats). Approximately 44 potential nesting sites are found throughout the RFO area. Other potential habitat sites are saline, alkaline, or gypsiferous playas that occasionally hold water. However, ephemeral playas do not support fish, the main staple forterns.

Specific surveys for nesting least terns have been conducted in potential habitat along the Pecos River and playas by the New Mexico Natural Heritage Program under a Challenge-Cost-Share agreement with the BLM. No other nesting terns have been found to date.

Environmental Impacts

No impacts to the interior least tern would result from livestock grazing. Recent habitat surveysfound no breeding populationsin potential nesting habitat that occurs as sand bars within the river channel.

Pecos (Puzzle) Sunflower *(Helianthus paradoxus)* - Federal Threatened

Affected Environment

The Pecos sunflower is found along alkaline seeps and cienegas of semi-desert grasslands and short-grass plains (4,000-7,500 ft.). Plant populations are found both in water and where the water table is near the ground surface.

In the RFO area, the sunflower is found in only a few areas outside of the BLNWR. In 1994, a new population was found growing on the margins of Lea Lake and its outflow at Bottomless Lakes State Park. Lloyd's Draw, east of the Pecos River, has the only known Pecos sunflower population on BLM land. It became evident at this location following a prescribed fire. Potential habitat also occurs on BLM land within the Overflow Wetlands Wildlife Habitat Area.

Potential habitat for the sunflower occurs on the allotment as low lying areas where the water table is near the ground surface. The low lying areas are not only along the existing river channel, but in old channel courses and oxbows. These areas are now invaded by saltcedar growing in dense stands, which might prevent the viability of the Pecos sunflower. No Pecos sunflower populations have been found on the allotment to date. Endangerment factors include dewatering of riparian orwetland areas where the sunflower is found, and surface disturbing activities, and excessive livestock grazing.

Environmental Impacts

Impacts to the Pecos sunflower due to livestock grazing would be negligible under the Proposed Action. Impacts would not occur under the No-Grazing Alternative. The dominance of its potential habitat by saltcedar appears to be a major factor controlling the sunflower's abundance and distribution. Populations of the sunflower might become established following saltcedar control in certain areas is seeds are present in the soil.

Pecos Pupfish *(Cyprinodon pecosensis)* - Federal Proposed

Affected Environment

The Pecos pupfish is found in a variety of habitats from saline springs and gypsum sinkholes to desert streams with highly fluctuating conditions. Pecos pupfish populations

are most dense in gypsum sinkholes on BLNWR. The species apparently thrives in these saline waters that support few other fish species. It occasionally occupies fresher waters in the Pecos River, but is uncommon in such habitats. In the river, the pupfish is most often found in

backwater areas and side pools that lack sunfish orother predators (NMDGF 1988; Sublette et al. 1990; NMIDGF 1997). The pupfish also inhabits the Overflow Wetlands Wildlife Habitat Area adjacent to the Bottomless Lakes State Park.

Endangerment factors include habitat loss caused by groundwater pumping and channel alterations, hybridization and/or replacement by the sheepshead minnow, and predation by non-native fish species. Potential impacts to habitat may occur from surface disturbing activities at or near springs or seeps. Other activities that severely impact habitat are not within the purview of the BLM, such as transportation and utilization of water associated with agricultural irrigation. Livestock grazing may impact springs or seeps but most of these sites have been protected with exclosures.

Environmental Impacts

Under the Proposed Action, livestock grazing impacts to the Pecos pupfish would be negligible. Under the No-Grazing Alternative, no impacts from livestock grazing would occur. Conclusions regarding riverine habitat are based on the same information used for the Pecos bluntnose shiner. Suitable sinkhole or spring habitat does not exist on the allotment.

9. Visual Resources Management

Affected Environment

The entire allotment is in a Class III area for visual resources management. In a Class III area, contrasts to the basic elements (e.g., form, line, color, or texture) caused by a management activity may be evident and begin to attract attention in the landscape. The changes, however, should remain subordinate in the existing landscape.

Environmental Impacts

The basic elements of the landscape would not change within the allotment under either management alternative. Potential impacts to visual resources would be analyzed and mitigated if new allotment management activities are proposed in the future.

10. **Recreation**

Affected Environment

A network of roads provide access to public and private lands within the allotment, although legal public access is limited. Access to most of the private and state lands is not currently controlled by fences, locked gates, or no-trespass signs. The BILM has designated off-highway vehicle use on public lands in the area as limited to existing roads and trails.

The allotment provides habitat for numerous game species including desert mule deer, mourning dove, and scaled quail. Predator and feral pig hunting may occur on the allotment, as well as trapping for predators or furbearers. Access to the river is limited on the allotment, though it is possible that fishing or minnow seining could take place.

General sightseeing, wildlife viewing, and photography are nonconsumptive recreational activities that may occur. Rock collectors find various minerals unique to the area, such as Pecos diamonds.

Environmental Impacts

No direct negative impacts to recreational activities on public lands would occur under either Alternative. Potential conflicts could arise between recreational pursuits and ranching activities, depending on hunting seasons and livestock use in a given pasture. Vandals could damage range improvements.

Under the No-Grazing Alternative, no conflicts between ranching activities and recreational use would occur on public lands. Success of hunts and nonconsumptive recreational opportunities would remain the same or slightly improve. Vandalism could still occur.

11. Significant Caves and Karst

Affected Environment

Allotment 62067 is in an area of medium potential for the occurrence of caves and karst. No caves or major karst features have been reported for the allotment, though a comprehensive inventory has not been completed.

Environmental Impacts

Because no caves or major karst features are known to exist on the allotment, impacts to these resources are not expected to be significant under either alternative. It is possible that cave or karst features exist on the allotment, but have not yet been discovered. If a feature is discovered in the future, protective measures could be required to mitigate adverse impacts to the feature. Fencing to exclude livestock and off-highway vehicles might be prescribed to prevent soil erosion, vegetation trampling, and livestock effluent from reaching the cave. A separate environmental analysis would be prepared prior to fence construction.

12. Air Quality

Affected Environment

The allotment is in a Class 11 area for the Prevention of Significant Deterioration of air quality as defined by the federal Clean Air Act. Class 11 areas allow a moderate amount of air quality degradation.

Air quality in the region is generally good, with winds averaging 10 to16 miles per hour depending on the season. Peak velocities reach more than 50 miles per hour in the spring. These conditions rapidly disperse air pollutants in the region.

Environmental Impacts

Dust levels resulting from allotment management activities would be slightly higher under the Proposed Action than the No-Grazing Alternative. The cumulative impact on air quality from the allotment would be negligible compared to all pollution sources in the region.

IV. CUMULATIVE IMPACTS

A cumulative impact is defined as "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time" (40 CFR 1508.7).

The analysis of cumulative impacts is driven by major resource issues. The action considered in this environmental assessment (EA) is the authorization of livestock grazing on Allotment 62067, and the major issues include:

(1) threatened and endangered species associated with the Pecos River, primarily the Pecos bluntnose shiner,

(2) Pecos River water quality, and

(3) riparian/wetland habitat within the Pecos River floodplain.

The incremental impact of issuing a grazing lease on these resources must be analyzed in the context of impacts from other actions. Other BLM actions that could have impacts on the identified resources include: livestock authorization on other allotments along the Pecos River; oil and gas activities on the riverfloodplain and on the uplands; rights-of-way crossing the river; and recreation use, particularly off-highway vehicles.

All authorized activities which occur on BLM land can also take place on state and private lands. In addition, significant impacts could result from reservoir management and the manipulation of riverflows, the alteration of the natural river system by Bitter Lake National Wildlife Refuge, and agricultural activities (e.g. dairies, crop production, and irrigation diversions and return flows).

Many of the actions which could contribute to cumulative impacts have occurred over many years. Impacts from open-range livestock grazing in the last century are still being addressed today. Sumner Dam, the principal structure controlling riverflows in this reach, was built in 1937. It was about this time that Bitter Lake National Wildlife Refuge was developed, which altered the hydrology of the river dramatically. Major irrigation projects were begun in the 19th century, and oil and gas activities began in the early part of the 20th century. All these activities are still occurring today, and are expected to continue into the foreseeable future to some degree.

The Proposed Action would not add incrementally to the cumulative impacts to threatened and endangered species, Pecos River water quality, or riparian/wetland habitat within the Pecos

River floodplain. The conclusion that impacts to these resources from grazing authorization would not be significant are discussed in detail in Section III of the EA.

V. MITIGATION MEASURES

Mitigation measures are actions which could be taken to avoid or reduce impacts likely to result from the Proposed Action or the No-Grazing Alternative. The following mitigation measures address possible impacts from livestock grazing under the Proposed Action.

Vegetation monitoring studies and riparian assessments would continue if a new grazing lease were issued. Changes to livestock management would be made if monitoring data show that adverse impacts to upland or riparian vegetation are occurring.

It is possible that unforeseen impacts to other resources could occur during the term of the lease. If adverse environmental impacts are observed, action would be taken to mitigate those impacts at that time.

VI. RESIDUAL IMPACTS

Residual impacts are direct, indirect, or cumulative impacts that would remain after applying the mitigation measures. Residual impacts following authorization of livestock grazing would be insignificant if the mitigation measures are properly applied.

VII. FUNDAMENTALS OF RANGELAND HEALTH

Through the Rangeland Reform '94 initiative, the BLM developed new regulations for grazing administration on public lands. With public involvement, fundamentals of rangeland health were established and written into the new regulations. The fundamentals of rangeland health are identified in 43 CFR §4180.1, and pertain to (1) watershed function; (2) ecological processes; (3) water quality; and (4) habitat for threatened, endangered, and other special status species. Based on available data and professional judgement, the evaluation by this environmental assessment indicates that conditions identified in the fundamentals of rangeland health exist on Allotment 62067.

VIII. BLM INTERDISCIPLINARY TEAM

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IX PERSONS OR AGENCIES CONSULTED

Ms. Louise Van Eaton - Lessee; Forest Guardians; New Mexico Department of Game and FishNew Mexico Energy, Minerals, and Natural Resources Department - Forestry and Resource Conservation Division; New Mexico Environment Department - Surface Water Quality Bureau; New Mexico State Land Office; U.S. Fish and Wildlife Service - Ecological Services; U.S. Fish and Wildlife Service - Fishery Resources Office

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